

PCT

10/538300

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference S30490PCT	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 03/10600	International filing date (day/month/year) 23/09/2003	(Earliest) Priority Date (day/month/year) 12/12/2002
Applicant SONY INTERNATIONAL (EUROPE) GMBH		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 03/10600

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-28 and partially 44-48 and 52

Method of solubilizing carbon nanotubes comprising the steps of mixing functionalized carbon nanotubes and a monomer molecule (or a precursor of a monomer) and then polymerizing wherein said polymerization occurs at the functional groups on the nanotubes.

Modified carbon nanotubes and an association of carbon nanotubes obtainable by the afore-mentioned process.

Use of the afore-mentioned modified carbon nanotubes.

2. Claims: 29-43, 49-51 and partially 44-48, 52

Method for solubilizing carbon nanotubes comprising the steps of mixing together carbon nanotubes and urea and heating the mixture.

Modified carbon nanotubes and an association of carbon nanotubes obtainable by the afore-mentioned process.

Use of the afore-mentioned modified carbon nanotubes.

INTERNATIONAL SEARCH REPORT

International Application No
EP 03/10600

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C01B31/02 C08K7/24 C08K3/04 C08K9/04 C08G18/70
C08G18/00 C08G18/28 C08G18/08 C07C263/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C01B C08K C08G C07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, INSPEC, COMPENDEX, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 426 134 B1 (LAVIN JOHN GERARD ET AL) 30 July 2002 (2002-07-30) column 2, line 1 - line 23 column 5, line 27 - column 6, line 24 ---	1-3,7, 9-16,28, 44,45,52
P,X	WO 03/038837 A (HYPERION CATALYSIS INT) 8 May 2003 (2003-05-08) page 2, line 20 - line 25 page 9, line 22 - page 10, line 3 page 14, line 2 - line 4 page 14, line 24 - line 25 page 17, line 30 - line 31 --- -/-	1-3,7, 9-16,24, 25,28, 44,45,52

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

12 May 2004

Date of mailing of the international search report

14. 06. 04

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INTERNATIONAL SEARCH REPORT

International Application No
/EP 03/10600

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002/161101 A1 (CARROLL DAVID ET AL) 31 October 2002 (2002-10-31) paragraphs [0022],[0042]-[0047],[0051],[0058],[0062] ---	1,3,7,9, 11-16, 28,44, 45,52
A	WO 01/10779 A (HYPERION CATALYSIS INT) 15 February 2001 (2001-02-15) page 3, line 18 - line 19 page 6, line 13 - line 19; examples 3,5; table 1 ---	1,3, 11-16, 28,44, 45,52
A	HIRSCH, ANDREAS: "Functionalization of Single-Walled Carbon Nanotubes" ANGEW. CHEM. INT. ED., vol. 41, no. 11, 3 June 2002 (2002-06-03), pages 1853-1859, XP002241543 cited in the application "Covalent Sidewall Functionalization" ---	1-6
A	EP 0 716 044 A (NAT SCIENCE COUNCIL) 12 June 1996 (1996-06-12) the whole document ---	29-52
A	VAN STEEN ERIC ET AL: "Comparison of preparation methods for carbon nanotubes supported iron Fischer-Tropsch catalysts" FISCHER-TROPSCH SYNTHESIS ON THE EVE OF THE XXI CENTURY (CATSA);KRUGER PARK, SOUTH AFRICA NOV 1 2000, vol. 71, no. 3-4, 1 November 2000 (2000-11-01), pages 327-334, XP002280026 Catal Today;Catalysis Today Jan 15 2002 "Experimental" -----	29,30, 44,45,52

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

EP 03/10600

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6426134	B1	30-07-2002	NONE	
WO 03038837	A	08-05-2003	WO 03038837 A1 US 2003089893 A1	08-05-2003 15-05-2003
US 2002161101	A1	31-10-2002	WO 02076903 A2	03-10-2002
WO 0110779	A	15-02-2001	US 6113819 A AU 6494900 A WO 0110779 A1	05-09-2000 05-03-2001 15-02-2001
EP 0716044	A	12-06-1996	JP 8183830 A US 5635581 A EP 0716044 A1 DE 69417561 D1 DE 69417561 T2	16-07-1996 03-06-1997 12-06-1996 06-05-1999 15-07-1999